



Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at <http://about.jstor.org/participate-jstor/individuals/early-journal-content>.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact support@jstor.org.

No. V.

TIPS FOR UMBRELLAS.

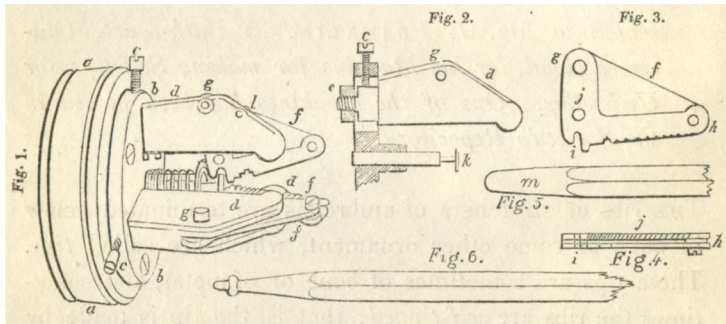
The SILVER ISIS MEDAL and FIVE POUNDS were presented to Mr. J. FRANKLIN, 15 Bath-court, Old-street Road, for his Machine for making Self-tips for Umbrellas. One of the Machines has been placed in the Society's Repository.

THE ribs or stretchers of umbrellas are terminated below in balls or some other ornament, which are called *tips*. These tips are sometimes of bone or of metal, and sometimes the ribs are *self-tipped*; that is, the tip is made by rounding the end of the whalebone itself into the required figure. Considerable difficulty has been experienced in making these tips with sufficient precision, as they must of course be made in some cheap and expeditious manner. The usual method was by rough-filing them into shape, and then giving the requisite degree of smoothness by means of glass-paper. Mr. Franklin, perceiving the tediousness of this mode, and yet knowing that whalebone, from its fibrous and elastic structure, requires to be brought into shape rather by filing and scraping than turning, which would be liable to tear up the fibres, has devised a tool possessing the properties of the file and scraper combined, and at the same time working with great speed.

Mr. Franklin obviates the necessity of fixing the whalebone in the chuck, by holding it in a hand-vice and presenting it between three compound cutters that project from the face of a chuck, and revolve with the full speed

of the lathe, by which the determined form is almost instantaneously given to it.

In fig. 1 *aa* is the chuck which screws on to the nose of a mandril: it has a seat turned in it to receive the circular plate *bb*, and a cavity deep enough for screw-nuts at the back of the plate. In this plate are three radial



openings with adjusting-screws *cc* at their ends, in which are fitted the three forked frames *ddd*, which are fixed by screw-nuts, one of which *e* is shewn in fig. 2. These frames hold the compound cutters *fff* by the screws at *gg*, on which they turn as joints. Fig. 3 shews a side-view of one pair of cutters, and fig. 4 a front view of their cutting edges. They are made of thin steel: the triangular plate *f* is filed along the edge *hi* to the exact form of the tip, and is set to a sharp cutting edge; on this is placed the second plate *j*, having collets interposed to keep them a little asunder, as shewn in fig. 4. This plate is at first formed so as to correspond perfectly with the under one; it is then filed into a waved edge, almost as if making a saw: these small notches are inclined, as shewn in fig. 4, in order to make their cutting edges meet the whalebone. The three pairs of these cutters are made exactly alike, and the holes *g*, by which they are jointed in the frames *d*,

are also quite alike. The cutters so prepared are put into their frames *d*, and these are slightly bound in their places by the nuts *e*; they are then placed exactly at equal distances from the centre by the adjusting-screws *c c*, and then the nuts *e* are bound quite fast to fix them. It is requisite for these cutters of themselves to keep open enough to receive the whalebone; and it is also requisite for them to close exactly alike on the whalebone when the workman presses it in. To press them outwards or open, a spiral spring is placed on a neck projecting from the centre of the plate *b b*, and to make them open or close equally together, a poppet *k* slides in the central neck, as shewn in fig. 2: this has a thin circular head *k*, and the cutters have exactly similar notches as at *i*, fig. 3, into which this head enters, and thereby causes them to move simultaneously. The cutters would fly outwards, poppet and all, if there was not a stop; but, as they can only move together, a stop to one cutter is enough—the screw *l*, fig. 1, is that stop: the back of the cutter *f* comes against it when they are all open enough. *m*, fig. 5, represents the end of a whalebone previously rounded ready to be thrust in between the cutters already described, whilst they are in rapid rotation: the waved cutters come first in contact with the whalebone, and cut through the fibres without tearing them up; the clear cutters follow, and scrape off the ridges as fast as they are made by the waved cutters. This operation, being thus divided between two cutters, prevents the breaking up of the fibre. Fig. 6 shews the form given to the tip by these cutters. The cutters are never stopped to change the whalebone, but are kept constantly revolving, and the tips are formed almost as fast as the workman can press them in and take them out. Experience soon teaches him to give the

pressure at which the cutters will act best on the material, which comes from this tool smooth enough to be varnished, or to be polished with oil and charcoal-dust on leather. For this purpose the whalebone is turned quickly round with one hand, being at the same time supported on the thigh, whilst the other holds the leather round the tip to polish it.

No. VI.

TOOL FOR BOOKBINDERS.

The Thanks of the Society were presented to Mr. J. MORRIS, 35 Ludgate-hill, for a Bookbinder's Tool for Lettering; which has been placed in the Society's Repository.

IN the present practice of bookbinders, where a label consisting of a line of letters alone is wanted, it is composed of movable types fixed in a case; but for a label consisting of letters and ornaments combined, the custom is to have the whole cut on one brass block, leaving only spaces for the insertion of movable pieces indicating the number of the volume. Such blocks, it is obvious, can only be used for lettering that particular work for which they were first intended, and are no longer of any value when the immediate purpose has been answered.

Mr. Morris's contrivance consists in composing the ornaments for labels, such as foliage and scroll work, of